

**UNITED STATES DEPARTMENT OF COMMERCE**

Patent and Trademark Office

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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/060,470	05/11/93	BEDNORZ	J Y0987074BX

ROYD, J EXAMINER

11M1/0907

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ART UNIT

PAPER NUMBER

1105

DATE MAILED: 09/07/93

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

5/11/93

This application has been examined  Responsive to communication filed on \_\_\_\_\_  This action is made final.

A shortened statutory period for response to this action is set to expire \_\_\_\_\_ month(s), \_\_\_\_\_ days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

**Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:**

1.  Notice of References Cited by Examiner, PTO-892. 2.  Notice re Patent Drawing, PTO-948.  
3.  Notice of Art Cited by Applicant, PTO-1449. 4.  Notice of Informal Patent Application, Form PTO-152.  
5.  Information on How to Effect Drawing Changes, PTO-1474. 6.

**Part II SUMMARY OF ACTION**

24-26, 86-70, 96-108

1.  Claims \_\_\_\_\_ are pending in the application.

Of the above, claims \_\_\_\_\_ are withdrawn from consideration.

2.  Claims 1-23, 27-85, 91-95 have been cancelled.

3.  Claims \_\_\_\_\_ are allowed.

4.  Claims 24-26, 86-70, 96-108 are rejected.

5.  Claims \_\_\_\_\_ are objected to.

6.  Claims \_\_\_\_\_ are subject to restriction or election requirement.

7.  This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8.  Formal drawings are required in response to this Office action.

9.  The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are  acceptable.  not acceptable (see explanation or Notice re Patent Drawing, PTO-948).

10.  The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_ has (have) been  approved by the examiner.  disapproved by the examiner (see explanation).

11.  The proposed drawing correction, filed on \_\_\_\_\_, has been  approved.  disapproved (see explanation).

12.  Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has  been received.  not been received.  been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.

13.  Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14.  Other

**EXAMINER'S ACTION**

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1. The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. The specification is objected to under 35 U.S.C. § 112, first paragraph, as the specification, as originally filed, does not support for the invention as is now claimed.

3. The language of claim 103 is not supported by the original specification.

4. Claims 103-108 are rejected under 35 U.S.C. § 112, first paragraph, for the reasons set forth in the objection to the specification.

5. The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. The specification is objected to under 35 U.S.C. § 112, first paragraph, as failing to provide an enabling disclosure commensurate with the scope of the claims.

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7. The present specification is only enabled for compositions comprising  $Ba_xLa_{5-x}Cu_5O_y$ . The art of high temperature (above 30°K) superconductors is an extremely unpredictable one. Small changes in composition can result in dramatic changes in or loss of superconducting properties. The amount and type of examples necessary to support broad claims increases as the predictability of the art decreases. See In re Fisher, 166 USPQ 18, 24 and In re Angstadt and Griffen, 190 USPQ 214, 218. Claims broad enough to cover a large number of compositions that do not exhibit the desired properties fail to satisfy the requirements of 35 USC 112. See In re Cook, 169 USPQ 298, 302 and Cosden Oil v. American Hoechst, 214 USPQ 244, 262. Merely reciting a desired result does not overcome this failure. In re Corkill, 226 USPQ 1005, 1009. In particular, the Examiner questions if any layered perovskite material containing copper will exhibit superconductivity? Does any stoichiometric combination of rare earth, an alkaline earth and copper elements result in an oxide superconductor?

8. It should be noted that at the time the invention was made, the theoretical mechanism of superconductivity in these materials was not well understood. (This is still the case today). Accordingly, there appears to be little factual or theoretical basis for extending the scope of the claims much beyond the proportions and materials actually demonstrated to exhibit high

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temperature superconductivity. A "patent is not a hunting license. It is not a reward for the search, but a reward for its successful conclusion", Brenner v. Manson, 383 US 519, 148 USPQ 689.

9. Claims 24-26, 86-90 and 96-108 are rejected under 35 U.S.C. § 112, first paragraph, for the reasons set forth in the objection to the specification.

10. Claims 86-87 and 96-108 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

11. The terms "layer-type", "perovskite-like", "rare-earth-like" are vague and confusing. What is meant by these terms?

12. Claims 101 and 107 recite "at least one element in a nonstoichiometric atomic proportion". Can any element be of nonstoichiometric atomic proportion?

13. The language of claim 103 is confusing. What is meant by the term "the composition having a superconductive/resistive transition defining a superconductive/resistive-transition temperature range"?

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless --  
(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

15. As discussed in Paper No. 20 of the parent application, 07/053,307, it is not fully clear what exact date Applicants are entitled to. However, it would appear to be no later than the date at which the samples were tested in the US to show superconductivity on approximately December 13, 1986.

16. Claims 24-26, 86-90 and 96-108 are rejected under 35 U.S.C. § 102(a) as being anticipated by Asahi Shinbum.

The reference confirms superconductivity in an oxide compound of La and Cu with Ba having a structure of the so-called perovskite structure. Although the reference fails to teach use of the testing of zero resistance for confirming superconductivity, it must have inherently been used it is one of the two methods used for testing for superconductivity (the other being diamagnetism). Accordingly, the burden of proof is upon the applicants to show that the instantly claimed subject matter is different from and unobvious over that taught by this reference. See In re Brown, 173 U.S.P.Q. 685, 688; In re Best, 195 U.S.P.Q. 430 and In re Marosi, 218 U.S.P.Q. 289, 293.

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17. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

18. The "person having ordinary skill" in this art has the capability of understanding the scientific and engineering principles applicable to the claimed invention. The references of record in this case reasonably reflect this level of skill.

19. Claims 24-26, 86-90 and 96-108 are rejected under 35 U.S.C. § 103 as being unpatentable over Asahi Shinbum.

20. The reference is relied upon as set forth in the previous rejection. This reference differs from the present claims in that it fails to disclose the presently claimed method of "causing an electric current to flow in the superconductor element". It was notoriously well-known in the art of superconductors to that a method of utilizing superconductive

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materials was to cause an electric current to flow in the material while it is cooled below its transition temperature (see MPEP 706.02(a)). Accordingly, it would have been well within the purview of one of ordinary skill to use the present claimed method with the materials disclosed by the reference. One would be motivated to cool the material of the reference to below the transition temperature and cause electric current to flow in the material to provide electricity without resistance. Accordingly, the present claims are unpatentable in view of the prior art of record.

21. This is a continuation of applicant's earlier application S.N. 07/875,003. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds or art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See M.P.E.P. § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE

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ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Boyd whose telephone number is (703) 308-2519.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.

J. Boyd  
August 30, 1993



PAUL LIEBERMAN  
SUPERVISORY PRIMARY EXAMINER  
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